EXHIBIT A

AMY T. ORR

Human Genome Sciences, Inc.
14200 Shady Grove Road
Rockville, MD 20850
(240) 314 4400 X2215
Amy_Orr@hgsi.com

12173 Hidden Brook Terrace
North Potomac, MD 20878
(301) 527 9471

EDUCATION

JAMES MADISON UNIVERSITY *Harrisonburg, VA* *Aug. 1983 – May 1987*

Bachelor of Science, Magna Cum Laude, Department of Biology

EASTERN VIRGINIA MEDICAL SCHOOL *Norfolk, VA* *Aug. 1987 – Sep. 1988*

M.D. Program Relevant coursework: Cell biology, immunology, biochemistry, microbiology, virology, anatomy and physiology. Left program in good academic standing after first year.

PROFESSIONAL EXPERIENCE

HUMAN GENOME SCIENCES, INC.
Department of Clinical Immunoassay Development

GLP Compliance Coordinator *March 2006 – present*
Manager, Clinical Immunoassay Development *September 2004 – February 2006*

Oversee GLP compliance issues for the department and assist a group of GLP coordinators who monitor individual Clinical Immunoassay labs for compliance. Work closely with Validation, Regulatory Affairs, Metrology and Quality Assurance departments to maintain equipment, monitor training of personnel and set guidelines for lab practices in accordance with GLP regulations.

Manager, Preclinical Development *July 2003 – August 2004*

Supervised an assay team of six research associates with the collective purpose of developing and qualifying bioassays to test clinical samples from Phase I and Phase 2 trials. Responsible for the oversight and implementation of a new GLP lab for the department.

Team Leader - Research Associate IV *July 2001 – June 2003*
Research Associate II, III, IV *June 1996 – June 2001*

Screened HGS proteins for activity in a human B-cell proliferation assay which uncovered the activity of BLyS. Developed a murine B-cell assay and worked on the characterization of BLyS and the inhibitory activity of antibodies generated against it.

Skills:

- Bioassay development and design; generation of SOPs and qualification reports
- Cell culture of human and murine B and T cell lines, primary cell isolation of human tonsillar B and T lymphocytes, murine bone marrow progentior cells and murine splenocytes
- Cell proliferation assays (^{3}H-thymidine incorporation, AlamarBlue)
- *in vivo* skills: injections (iv, ip), retro-orbital bleeding, gross dissection; mouse models
- ELISAs for clinical trial and research samples
- Calcium mobilization assays
- Soft agar colony-formation assays
- Radioisotope experience and Authorized User for six years on HGS' Radioactive Materials Use License
- Computing skills: Proficient with Windows XP, Microsoft Office (Word, Excel, PowerPoint), graphical/statistical software (SoftMax PRO, GraphPad Prism) and several instrument data acqusition programs

MEDICAL COLLEGE OF VIRGINIA *Richmond, VA*
Department of Internal Medicine
Division of Hematology/Oncology

Laboratory Specialist Senior *July 1995 - June 1996*
Laboratory Specialist *January 1989 - July 1995*

Participated in leukemia research leading to the discovery of a novel therapeutic and worked to characterize its ability to synergize with known chemotherapeutics.

Technical Expertise:

- Gene and Protein Expression (Northern blotting, SDS-PAGE and Western blotting)
- Cell Culture (human leukemia cell lines; leukemic myeloblasts isolated from peripheral blood)
- Apoptosis Analysis (cell morphology, Static-field gel electrophoresis, DNA fragmentation, TUNEL)
- HPLC experience (cellular extractions of nucleotides and data analysis)
- Enzyme assays (cellular and subcellular extraction measuring activity of protein kinase C, deoxycytidine kinase and cytidine deaminase)
- DNA Damage Analysis (alkaline unwinding, neutral elution)
- Cellular Growth & Differentiation (soft agar cloning, MTS dye assay, esterase staining adherence)
- Cytokinetic Studies (cell staining for cell cycle analysis)

PUBLICATIONS

1. Moore PA, Belvedere O, **Orr A**, Pieri K, LaFleur DW, Feng P, Soppet D, Charters M, Gentz R, Parmelee D, Li Y, Galperina O, Giri J, Roschke V, Nardelli B, Carrell J, Sosnovtseva S, Greenfield W, Ruben SM, Olsen HS, Fikes J, Hilbert DM
   BLyS: member of the tumor necrosis factor family and B lymphocyte stimulator.
   Science 1999 Jul 9;285(5425):260-3

2. Grant S, **Turner AJ**, Freemerman AJ, Wang Z, Kramer L, Jarvis WD Modulation of protein kinase C activity and calcium-sensitive isoform expression in human myeloid leukemia cells by bryostatin1: relationship to differentiation and ara-C-induced apoptosis. *Exp Cell Res.* 1996 Oct 10;228(1):65-75.

3. Freemerman AJ, **Turner AJ**, Birrer MJ, Szabo E, Valerie K, and Grant S. Role of c-*jun* in human myeloid leukemia cell apoptosis induced by pharmacological inhibitors of protein kinase C. *Molecular Pharmacology* 1996 May;49(5):788-95

4. Grant S, Freemerman AJ, Birrer MJ, Martin HA, **Turner AJ**, Szabo E, Chelliah J, and Jarvis WD. Effect of 1-[*B*-D-arabinofuranosyl]cytosine on apoptosis and differentiation in human myeloid leukemia cells (U937) expressing a c-Jun dominant-negative mutant protein (TAM-67). *Cell Growth and Differentiation* 1996 May;7(5):603-13.

5. Bear HD, McFadden AWJ, Kostuchenko PJ, Lipshy KA, Hamad GG, **Turner AJ**, Roberts JD, Carr M, Carr S. and Grant S. Bryostatin 1 induces sustained depletion of splenocyte protein kinase C activity *in vivo* after a single intravenous administration. *Anti-Cancer Drugs* 1996 May;7(3):299-306

6. Grant S, Rao A, Freemerman AJ, **Turner AJ**, Kornstein MJ, Chelliah J, and Jarvis WD. Divergent effects of calcium ionophore (A23187) on bryostatin 1-mediated induction of differentiation and potentiation of 1-[*B*-D-arabinofuranosyl]cytosine-related apoptosis in human promyelocytic leukemia (HL-60) cells. *Molecular and Cellular Differentiation* **3**:337-359, 1995.

7. Grant S, Freemerman AJ, Gregory PC, Martin HA, **Turner AJ**, Mikkelsen R, Chelliah J, and Jarvis WD. Induction of apoptotic DNA fragmentation and down-regulation of c-*jun* in human myeloid leukemia cells by the permanent calcium chelator BAPTA/AM. *Oncology Research* **7**:381-392, 1995.

8. Grant S, **Turner A**, Nelms P, and Yanovich S. Characterization of a multidrug resistant human erythroleukemia cell line (K562) exhibiting spontaneous resistance to 1-*B*-D-arabinofuranosylcytosine. *Leukemia* **9**:808-814, 1995.

9. Grant S, **Turner AJ**, Bartimole TM, Nelms PA, Joe VC, and Jarvis WD. Modulation of 1-[*B*-D-arabinofuranosyl]cytosine-induced apoptosis in human myeloid leukemia cells by staurosporine and other pharmacological inhibitors of protein kinase C. *Oncology Research* **6**:87-99, 1994.

10. Jarvis WD, **Turner AJ**, Povirk LF, Traylor RS, and Grant S. Induction of apoptotic DNA fragmentation and cell death in HL-60 human promyelocytic leukemia cells by pharmacological inhibitors of protein kinase C. *Cancer Research* **54**:1707-1714, 1994.

11. Jarvis WD, Povirk LF, **Turner AJ**, Traylor RS, Gewirtz DA, Pettit GR, and Grant S. Effects of bryostatin 1 and other pharmacological activators of protein kinase C on 1-[*B*-Darabinofuranosyl]-cytosine-induced apoptosis in HL-60 human promyelocytic leukemia cells. *Biochemical Pharmacology* **47**:838-852, 1994.

12. Grant S, Jarvis WD, Swerdlow PS, **Turner AJ**, Traylor RS, Wallace HJ, Lin P-S, Pettit GR, and Gewirtz DA. Potentiation of the activity of 1-[*B*-D-arabinofuranosyl]cytosine by the protein kinase C activator bryostatin 1 in HL-60 cells: association with enhanced fragmentation of mature genomic DNA. *Cancer Research* **52**:6270-6278, 1992.

13. Grant S, Jarvis WD, **Turner AJ**, Wallace HJ, and Pettit GR. Effects of bryostatin 1 and rGM-CSF on the metabolism of 1-[*B*-D-arabinofuranosyl]cytosine in human leukaemic myeloblasts. *British Journal of Haematology* **82**:522-528, 1992.

14. Grant S, Boise L, Westin E, Howe C, Pettit G, **Turner A**, and McCrady C. *In vitro* effects of bryostatin 1 on the metabolism and cytotoxicity of 1-*B*-D-arabinofuranosylcytosine in human leukemia cells. *Biochemical Pharmacology* ***42***:853-867, 1991.